Michael McMaster: Human Embryonic Stem Cells for Predictive Toxicology

Since World War II, over 80,000 chemical compounds have been developed in the U.S. About 3,000 of these chemicals are produced at rate of one million pounds per year. Do these chemicals have potential public health risks? Can exposure to these chemicals be linked to childhood development disorders, such as autism? What challenges do environmental health programs face in trying to identify toxic chemicals? Could stem cell science help assess the toxicity of these chemicals? A panel of speakers addressed these questions at the California Institute for Regenerative Medicine on September 30, 2009.

Michael McMaster, PhD, summarized the challenges of predictive toxicology and described how he has applied human embryonic stem cells as a model system for studying the toxicological effects of nicotine. A similar approach could be used to assess the role of chemicals in the development of autism.

McMaster is an associate professor in the department of cell and tissue biology at the University of California, San Francisco with a co-appointment in obstetrics, gynecology, and reproduction sciences.

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